

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



A 335-8  
R 88  
apv

# Rural Lines

RURAL ELECTRIFICATION ADMINISTRATION • U. S. DEPARTMENT OF AGRICULTURE

APRIL  
1957



FOR MORE FARM PROFITS



FOR SOCIAL LIFE



FOR EMERGENCIES



FOR QUICK ANSWERS AND REPLIES

LIBRARY  
CURRENT SERIAL RECORD  
  
★ APR 18 1957 ★  
  
U. S. DEPARTMENT OF AGRICULTURE

This big dial illustrates some important rural uses of modern telephones. Color reproductions of these sketches will be part of a new exhibit now being prepared by REA for the use of borrowers.



FOR SAVING A TRIP



FOR BUILDING YOUR BUSINESS



FOR FARM AND HOME SAFETY

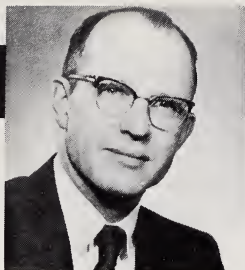


FOR FAMILY TIES



EXTENSIONS FOR THE FARM  
SAFE STEPS

## *A Message from the*



## **ADMINISTRATOR**

**M**ORE than six months ago REA began an intensive review of its telephone loan policies and procedures.

We had two objectives. One was to determine whether we could help to further expedite the fine job of rural telephony now being advanced by independent and cooperative telephone companies. The other was to find out whether we could improve and simplify our internal procedures, saving time and money, without weakening the security of our loans.

This review is nearing conclusion. Possibly before this issue of *RURAL LINES* is delivered to its readers, details of resultant revisions in policy will be in final form for public announcement.

We believe that the review has been worth while. We hope that the policy changes toward which it has pointed the way will meet with the general approval of those who are teamed up with REA to work toward the goal of nationwide availability of dependable, modern communications facilities.

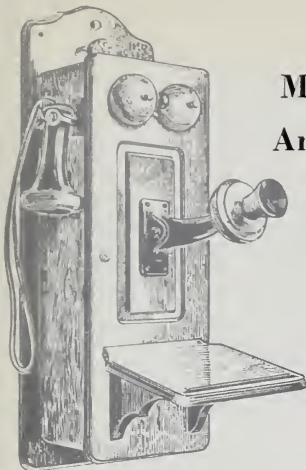
We are confident that the streamlining of internal procedures will reduce "red tape," provide faster service to our borrowers, and improve REA's operating efficiency and economy.

We are grateful to the many individuals in the telephone industry—men from independent commercial companies, cooperatives and the Bell system—who have contributed from their experience and "know how" to this study.

*David G. Hamill*

*Administrator.*





## Maine Telephone Company Modernizes And Bolsters Community Respect After

# 55 Years Of Service

**P**ROSPECTS of modern dial telephone service to go into effect this summer have the 800 subscribers of the Unity Telephone Company, in Maine, newly enthused about the rural company that long ago won community respect through sound and efficient operation.

Construction work nearing completion will not only improve service for present subscribers, but will also provide the convenience of telephones for the first time to more than 100 residents of the area.

Thanks to dedicated devotion to the affairs of the company by a group of highly respected officers and directors, the Unity system has been operating profitably for a number of years. New construction and rebuilding give promise of increased success.

Three unattended dial central offices, located in the towns of Unity, Albion and Newburg, will serve the needs of approximately 900 subscribers, replacing four old magneto C.O.'s. The modernization work being carried out through an REA loan includes rebuilding 122 miles of line, constructing 22 miles of new line, and erection of a new building for

central and commercial offices in Unity.

The story of the Unity Telephone Company goes back 55 years, when four residents had telephones served from lines running through Unity. In order to provide local service at low cost, the Unity Telephone Company was formed by a group of citizens. One of the four residents who had telephones, and also one of the original organizers of the local company, was E. Donald



Chase, now president and manager of the system. He has served on the board of directors continuously since the incorporation and has been president since 1917.

Mr. Chase, a New Englander who makes a habit of success, was both a farmer and a businessman until his "retirement" to run the telephone system. Two other retired farmers, H. L. Glines and H. M. Brown, devote much of their time to the company while serving as secretary-treasurer and director, respectively.

Other officers and directors whose reputations in their communities have given prestige to Unity are Walter Gerald, vice-president, and directors G. M. Hammond, H. L. Keay and K. B. Strout.

Unity Telephone Company serves subscribers in parts of Kennebec, Waldo and Penobscot counties. Its service area is in a rugged section of Maine, but one that enjoys a good economic rating. Residents of the area are engaged in both farming and manufacturing employment, so that incomes are relatively high. Despite the hilly nature of the section, farmers do well with poultry, dairy products, cattle, potatoes and hay crops. Good rainfall during the growing season is one of the blessings to the agriculture of the area.

Winters are rugged there, with a season's snowfall of about 100 inches considered normal. Blizzards have twice given the system a hard time by knocking down lines, once in 1945 and again in 1952. But, oddly enough, it was a tropical hurricane that did the heaviest damage to this system. In 1954 Hurricane Edna swept through the section and left in its wake a wreckage of broken and twisted lines that took weeks to restore.

Mr. Chase, only living member of the original group of organizers, has remained nearly as active in his retirement as he had



E. Donald Chase, president and manager of Unity Telephone Company, Maine.

been during his farming and business career. He devotes much of his time to state and civic affairs and is an active member of the Unity Civic Association.

He is a past president of the Maine Telephone Association; former president of the Turner Center Dairy Association and was town clerk of Unity for 26 years.

The leadership provided by Mr. Chase and his fellow officers and directors has pulled the rural telephone system through some difficult times. Residents in the area have full confidence that these men, who have tackled the largest single project in the 55-year history of the company, are going to make Unity Telephone Company better than ever.

Community acceptance and respect are factors that have helped this Maine system survive and grow through more than half a century of public service.

Borrowers Should Be Wary Of This  
Unwelcome "Relative" In The Fight For

# Humidity Control

EVERYONE knows the difficulties that can be caused by a brother-in-law who comes for a weekend visit and decides to move in as a permanent guest.

REA's telephone operations and maintenance engineers caution borrowers against another "relative" who can move into the dial central office at any time and cause more trouble and expense than any human counterpart. This is relative humidity, a visitor that will corrode relays and play hob with the automatic functioning of the dial system.

U. S. Weather Bureau statistics show that there are very few areas in this country that do not have humidity problems during some period of the year, so preventive measures are needed even in the so-called dry areas.

THE general recommendation of manufacturers is that the relative humidity in buildings housing dial central office equipment should not exceed 60 percent. However, air moisture itself will not harm the equipment—as long as it remains suspended in the air. But when high relative humidity is combined with a temperature drop, then the moisture will condense and settle on the equipment. This is when corrosion occurs and contacts are thrown out of kilter.

Since the troubles are caused by a combination of two factors,

there are two general methods of avoiding the difficulties. First, control the temperature of the air and prevent it from reaching the dew point; secondly, reduce the moisture content of the air in the central office.

UNDER certain circumstances the first method, controlling the temperature of the dial central office, may be workable. Controlling condensation by adding heat to the building has definite limitations, however. For instance, it's not satisfactory when sudden and extreme changes of temperature occur, nor when temperatures of 70 degrees F. and above are involved. Furthermore, in very cold areas it becomes expensive to provide the required heat.

Most accepted and used method of controlling relative humidity in dial central offices is to remove part of the moisture from the air to avoid "condensing out" on the equipment. This can be accomplished by three different methods—by *absorption*, by mechanical means, or by *adsorption*.

USING a chemical *absorbent* is not completely satisfactory because of the frequent replacement required and the trouble involved in handling the chemical. In this method a substance such as calcium chloride extracts mois-



ture from the air and retains the moisture through chemical change. Manually removing and replacing the saturated chemical is usually a messy and expensive operation.

**H**UMIDITY control by mechanical means uses the same principle as liquid refrigeration. Moist warm air is passed over a set of cooling coils, resulting in condensation of some of the moisture on the surface of the coils. This system works well until temperatures drop below 65 degrees F., in which case ice and frost form on the coils. Unless the coils are defrosted frequently the layer of ice builds up, resulting in continuous operation of the machine.

In this connection, the engineers point out, it is common belief that low temperatures always mean low relative humidity. U. S. Weather Bureau statistics indicate that relative humidities above 60 percent are fairly common in the 30 to 60 degree F. range.

The third system of moisture control involves the use of an *adsorbent* chemical, such as silica gel. This chemical has the quality of extracting moisture from circulating air and holding it on its surface without undergoing any chemical change. Then, during

periodic "rest periods," the unit automatically blows heated air across the chemical to drive off the collected moisture and vent it outside the building. This method is widely employed by telephone systems. The engineers recommend its use especially in areas where relative humidity in excess of 60 percent and temperatures below 65 degrees F. exist concurrently for extended periods.

They recommend checking with the nearest Weather Bureau station to determine the average temperatures and relative humidity conditions for each season of the year in your particular area.

**W**HICHEVER system of humidity control is best suited to your conditions, an electrically controlled humidistat should be installed to control operation of the dehumidifying unit. It can be set to maintain any desired relative humidity in the equipment room.

The engineers refer borrowers to *Heating, Ventilating and Humidity Control*, Section 1251 of the Telephone Operations Manual. It provides information on cutting short the visits of this unwelcome "relative."

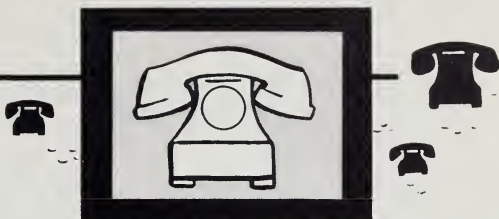
---

## Meetings of Interest to REA Borrowers

Iowa Ind. Tel. Assoc., Apr. 2-3, Fort Des Moines Hotel, Des Moines  
REA Borrowers, Apr. 11-12, St. Nicholas Hotel, Springfield, Illinois  
Ohio Ind. Tel. Assoc., Apr. 16-17, Deshler Hilton Hotel, Columbus  
REA Borrowers, Apr. 16-18, Daniel Boone Hotel, Columbia, Missouri  
Indiana Tel. Assoc., May 8-9, Claypool Hotel, Indianapolis  
Wisconsin Tel. Assoc., May 15-16 (Hotel not selected)  
Illinois Tel. Assoc., May 22-23, Pere Marquette Hotel, Peoria  
Kansas and Missouri Tel. Associations, May 27-28, Town House Hotel,  
Kansas City, Kansas



# TELEPHONE MERCHANDISING



## COLOR SET DISPLAYS

Arrange with a merchant in your community to set up an attractive color set display in his store window or display room. You can illustrate how the sets blend with colors in drapes and furniture coverings. Good displays like this not only sell the color sets, but also help to convince subscribers that extension sets can be decorative additions to their rooms. The cooperating merchant can likewise benefit, because such displays can stimulate sales of his products, too.

## SALESMEN, NOT ORDER TAKERS

Do you check regularly to be sure that your plant and office personnel try to *sell*? It makes a big difference in a telephone system's receipts if personnel make a point of suggesting additional service, instead of merely accepting an order. Your personnel need help and supervision to become real salesmen, and it's up to you to provide that help.

## DON'T SETTLE FOR MINIMUM SERVICE

One important help to your staff is to impress on them the importance of persuading a subscriber to sign for adequate service. Most people are not satisfied with the minimum where other necessities and conveniences are concerned, and it's not too

hard to persuade them to buy more than just minimum telephone service.

Installers and service men can *see* what subscribers need for adequate services; office personnel can *learn* what they need by intelligent conversation. Keep your people keyed to looking for ways to upgrade service, sell extensions, suggest extras.

## SELL A "PACKAGE"

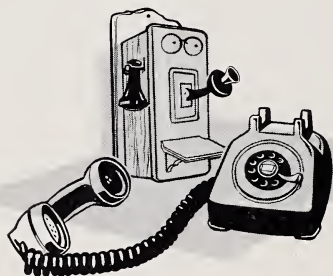
It's easier for your personnel to do a thorough selling job if you provide them with "package" services to suggest to subscribers. There's a big advantage in preparing a named "package" service to fit to various family circumstances, such as number of persons, size of home, type of home, etc.

Recommendations are usually tailored to particular circumstances, but many telephone systems have found that named "packages" are very helpful in selling adequate service. These "package" deals impress subscribers with the system's desire to give them good service. They often appear to have a bargain price appeal, and most times the subscriber feels that if he does not buy the entire "package" he may be settling for something less than is best for him.

## GOOD LISTENING, *then* GOOD TALKING

One of the first requisites of a good salesman is the ability to *listen*. Then he gets the facts on which he can base his *telling*. Keep reminding your personnel that they must listen for the buying motive of prospective subscribers. Most times this means asking questions in order to get information about the subscribers circumstances, but often these important clues are voluntarily mentioned by subscribers. It's up to you and your staff people to recognize these clues to buying motives when you hear them.

When you've discovered that buying motive, then you can begin to *tell* the subscriber what service is best for him. It may have been just a chance remark, for instance that he works at night. Then your cue is to suggest a bedroom extension for the safety and conven-



ience of his wife when she is at home alone. Or if he mentions that he uses the telephone in his business, then one-party service is essential to be sure that he does not miss important calls because of busy lines.

The possibilities along these lines are endless. Work with your staff people to keep them alert

to the clues that lead to adequate service and additional revenue.

~

## USE SALES TALKS THAT WORK

When you see that a good selling job has been done to provide a subscriber with adequate service, get your employee to reconstruct the conversation and the selling points that were used. Pass on that information to the others on your staff and point out the key parts of the conversation that resulted in the sale. In other words—when you've got a good thing, use it.

Over a period of time you will be able to build up a substantial file of sales talks that will fit many situations.

~

## DON'T BE BASHFUL

You've got to blow your own horn to get the word around about the service and convenience you're selling. Keep your eyes open for every opportunity to "tell and sell". Window posters are always good for reaching prospective subscribers (a new set of good-looking posters is now being prepared by REA, and announcement of their availability will be made soon).

Be sure that all your system vehicles, including private cars of your personnel, carry a poster or sticker plugging the convenience and economy of telephone service.

Keep in touch with your local newspaper editor and radio and TV managers. Give them information about things like expansion or modernization plans, traffic volume, number of subscribers, and other pertinent data.



# Rural Lines

REA



Personnel of several Georgia cooperatives watch intently as REA timber expert illustrates how to test soundness of pole. See page 14 for photo story on pole inspection and maintenance schools.

# How To Grow Old Early

or

## 10 Days in the Life of a Co-op Manager

*Dear Editor:*

SO YOU want to know how things are going in northern Michigan? Well, one morning this winter I woke up to find everything covered with a layer of beautiful ice. It looked beautiful for a while, anyway, because there was no wind and everything on our system was functioning normally.

At 8:25 A.M. things started happening. First, one of our power plant substation transformers picked this particular time to blow up. Oh, sure, we could get it back into service. All we had to do was ship it a few hundred miles to the manufacturer for repairs.

At 9 A.M. that morning the winds came. Our transmission line, coated with ice 6 inches in diameter, began swinging in all directions, like a rumba dancer. We had to cut off the entire system for about four hours. You have no idea how much happiness a thing like that can generate among 5000 consumers. We were able to get the south end of the system back into service at about 12:30 P. M., but it took another 2½ hours to get power flowing to consumers on the west end.

After getting that squared away, it was the distribution lines' turn. During the evening 35-mile winds in heavily wooded areas gave those lines the very dickens.



Roy H. Wells

Next morning winds on the south end whipped themselves up to 65 miles per hour, knocking several miles of distribution lines out of service. We worked right through on them and had them back in service at 2 o'clock in the morning the next day.

Meanwhile, one of the interlake steamships decided to drop anchor between De Tour and Drummond Island and picked the perfect spot. Right alongside our big sign that says, "CABLE CROSSING, DO NOT ANCHOR". And in broad daylight, yet. Of course, they fouled our cable and knocked out our service to Drummond Island. As a matter of fact, they did such a thorough job that they had to cut themselves loose, leaving us







with the anchor and about 120 feet of chain attached to our busted cable.

For ten days our work on the cable was slowed to a standstill by winds ranging from 20 to 65 miles per hour, and work out there on the river was a tough proposition. The high winds had 38 ships backed up in the river waiting a chance to get out on Lake Huron.

More distribution line trouble developed a few days later when ice on the ground melted. Where lines had been built in rocky soil the ground became so wet that trees were coming out by the roots—and taking our lines right with them.

All these interesting proceedings were taking place during the famed Michigan deer hunting season. As usual, the happy nimrods couldn't resist taking pot shots at our insulators, and they



all seemed to be fine marksmen. We had something new this year when a budding Daniel Boone managed to shoot off one of our primary wires, taking out about 300 feet of No. 4 ACSR from our primary line.

Well, Editor, that's my report on how things are going in northern Michigan. I hope you're having fun, too. I'm sure you're not surprised to see a few additional gray hairs decorating my head.

Sincerely,

Roy H. Wells, *Mgr.*

Cloverland Electric Co-op

P. S. Whaddya mean, do I have any pictures of the ice storm? I was too busy to eat, much less play with cameras.

*RHW*

---

## Co-op Payroll Floods Town With \$2 Bills

Citizens of the town of Alma, Wisconsin, saw a graphic illustration of what their rural electric cooperative means to the economy of the area when Buffalo Electric Cooperative made one of its payrolls this winter in \$2 bills.

Manager Eli Maule stated that almost 1500 of the bills were put into circulation. The *Alma Journal* marveled editorially at the flood of bills spent in the community.

After the payroll gimmick made such an impression on the residents and merchants, Manager Maule said that he wishes there were some similar way to illustrate how much money farmers are able to spend in the area as a direct result of rural electrification.

# WHAT'S NEW in ELECTRIC OPERATIONS?



**ACCOUNTING PROGRESS.** REA strives to provide leadership in developing fully adequate accounting for the expanding activities of electric borrowers. Following is a review of the major steps which have been or are being taken in this field.

## *Directors' Manual On Basic Accounting Principles.*

REA recently completed—and sent to every director of electric borrowers—a manual on basic accounting principles and interpretation and use of financial statements. This is intended as an aid to directors in keeping informed about the condition of the business, so that they can make intelligent decisions and formulate effective policies. The manual points out the relationship of the various accounts summarized in financial statements, and suggests certain ratios to be determined to assess the financial condition of the electric system, its business trends and prospects for the future.

## *Minimum Audit Standards*

REA recently completed and issued a revised manual of minimum audit standards to give borrowers and their CPA's more specific information on REA requirements and to assure more adequate reporting of audit findings.

The American Institute of Accountants cooperated by making a thorough review of the manual and by announcing its release in the *Journal of Accountancy*.

Following publication, REA conducted a series of meetings throughout the country to explain to CPA's the audit standards and review procedures.

## *Manual for Preservation of Borrowers' Records.*

REA has revised and now has under final review its manual for preservation of borrowers' records. It embodies the changes and revisions adopted by the Federal



Providing electric borrowers with ways and means of attaining more efficient and economical operation is a continuing aim of REA's Electric Operations and Loans Division. This is the first of a series of articles on subjects under study and development by this Division.

Power Commission in its records retention procedures for electric utilities. The new manual also takes into account the improvements and wider adoption of microfilming techniques in preserving records. There is also a reduction in the time for which a number of types of records must be kept.

#### *Interpretation of Accounting Principles and Procedures.*

In the near future REA will provide borrowers and CPA's with a series of publications explaining the application of general accounting rules in specific

situations. These are designed to promote the fullest use of the accounting system and solve the perplexing problems that crop up occasionally regarding the proper procedures to be applied.

#### *Training Program in Accounting.*

Personnel in various functions of REA have requested opportunity to learn more about accounting, since it has some effect on most of their activities. Consequently, a continuing project to provide accounting training for REA employees has been established and many will receive the training in the next few months.

#### *Correspondence Accounting Course.*

REA is currently revising its correspondence course in accounting for use of borrowers' employees and REA personnel. Resumption of this course, discontinued in 1953, is in response to numerous requests. Tentative plans are that the course will be available through the U. S. Department of Agriculture Graduate School.

#### *Uniform System of Accounts & Specialized Accounting Improvements.*

REA's Uniform System of Accounts was revised in 1953 to provide up-to-date accounting procedures for rural electric cooperatives.

In 1954 and 1955 several supplementary manuals were issued to provide improved procedures in various areas of specialized accounting. The field of accounting is subject of continuing study by the Operations and Loans Division, and borrowers will be kept informed of the most efficient and up-to-date accounting procedures.





Sounding pole with a hammer to check for internal decay.

## Pole Inspection and Maintenance

**H**OW can an electric cooperative avoid pole failure? How can the useful life-span of poles be increased?

Answers to these questions go a long way towards helping an electric system render reliable service and achieve economy of operation.

REA's pole inspection and maintenance field classes inform borrowers on how to inspect poles, how to check extent of deterioration, and how to take corrective action and properly apply preservatives to increase pole life.

These pages show some scenes from a school recently conducted at Alma, Georgia, on the lines of Satilla Electric Membership Corporation, one of a series of six such instruction sessions held throughout the state. Classes were conducted by an REA timber expert and field engineer.

Underground surface decay is detected by probing with blunt screwdriver.



Screwdriver sinks into decay pocket in deteriorated pole.







**Increment borer provides sample of interior of pole.**



**Closeup view of core removed from pole, showing original preservative and condition of interior wood.**

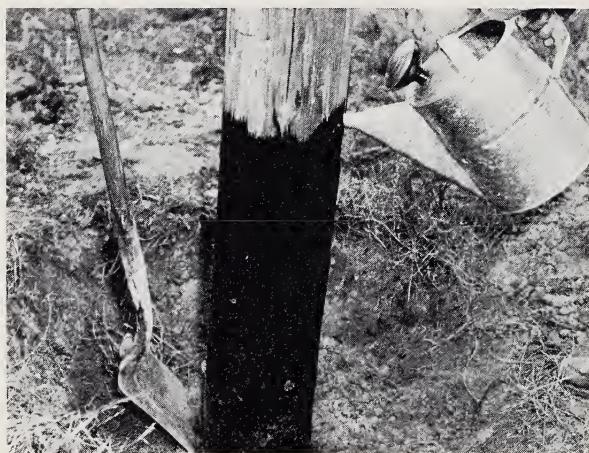
**Here a non-decaying plug is driven into hole left by borer.**





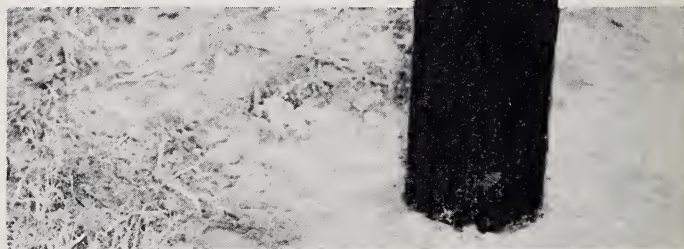


**Pole is measured at groundline to check whether it meets minimum permissible circumference.**



**Preventive maintenance. Preservative is poured on pole, excess runs down into narrow trench.**

**The completed job. Proper maintenance adds to serviceable life of pole, cuts replacement costs.**





## Back The Attack On Traffic Accidents

A REVIEW of nationwide safety statistics for the year 1956 shows the urgency of supporting all traffic safety programs. Of the 95,000 fatalities during 1956, 40,000 were due to traffic accidents. During the same time, there were 1½ million injuries and an economic loss of \$4.5 billion. These figures are appalling when we realize that this means there is one fatality every 13 minutes, one person injured every 23 seconds and a dollar loss of \$19,500 a minute.

REA borrowers' record for transportation fatalities reached a high of five during the year 1949. This figure gradually tapered off until the year 1955 when not one life was lost due to transportation or traffic. The record since is discouraging. During 1956, five cooperative employees lost their lives as a result of traffic accidents and the year 1957 has already produced three such deaths.

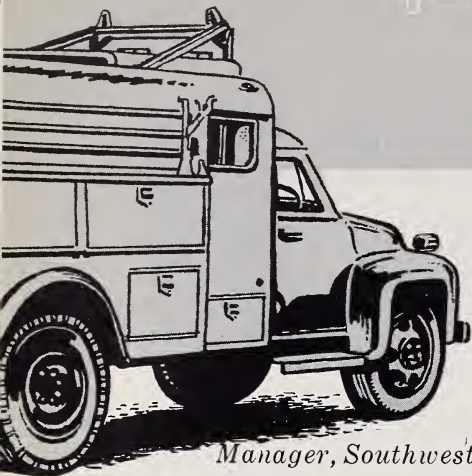
Causes contributing to this loss can be enumerated as follows: collisions, excessive speed, violation of existing traffic laws, im-

proper inspection and maintenance of cars and trucks, and inadequate driver testing programs.

We can get behind and back the attack by assuring that all vehicles are properly inspected and maintained and completely equipped with such safety devices as first aid kits, safety straps, hard hats, fire extinguishers and so forth. It is the duty of cooperative management to back the attack by setting a better personal example in our traffic behavior, and by joining and actively supporting with time, talents and funds not only local but also national safety organizations. There is no doubt that a great amount of good can be accomplished through group meetings, radio programs and news letters.

Considerable information on the fight to stop the rising flood of traffic deaths and destruction can be obtained from the National Safety Council. It is once again urged that all of us get behind the Council in this "Back The Attack Campaign" and give it every possible aid and support.





## Better Trucks . . . at Lower Cost

by

*U. J. Gajan*

*Manager, Southwest Louisiana Electric Membership Corp.  
Lafayette, Louisiana*

**T**RANSPORTATION is a major item of expense to an electric utility. We must therefore utilize our equipment to obtain the maximum use and results at the lowest operating cost per unit.

When thinking of vehicle maintenance and cost in the proper perspective, we must think of numerous essential items such as labor, parts, tires, gasoline consumption, time lost because of breakdowns and life expectancy of vehicles. When all these various items of cost are totaled at the end of each month and the total mileage of each truck prorated, they reflect the true picture of cost; that is, cost per mile of operation. We are constantly faced with the problem of how to improve our transportation and lower costs, drawing upon previous experience and records.


Many years ago we found it necessary to construct and operate our mechanic shop and all other related activities. Our shop is completely equipped, capable of

doing any type of repair on any transportation unit. It is operated by a head mechanic and a qualified, experienced helper. The shop opens at 7 A.M. each day to take care of minor repairs and flat tires, thus avoiding any delay in the trucks getting out on schedule for a good day's work.

Over the many years of operating experience we found that the appearance of a truck is very important to receive maximum value on trade-in. Therefore, we set up a schedule so that each truck is polished once every six weeks. Any dents or scratches are straightened and painted on weekends. As a result, average trade-in value has been about \$700 on trucks having 80,000 to 110,000 miles.

Each Saturday a schedule of preventive maintenance is carried out. Every truck is given a complete inspection, with emphasis on minor repairs. During vacation periods all utility beds and bodies are repaired and painted. The end results have been so ef-





**T**HE key to good operation and maintenance practice is organization. First, determine your objective, then plan and direct accordingly. Integrate your people and activities according to their ability to get the job done. Remember that cost is not always the determining factor. High operating and maintenance cost does not necessarily reflect bad management; and neither does low operating and maintenance cost always reflect good management. We must constantly strive to gain new efficiency and economy and simultaneously provide the best service at the lowest possible cost.

fective that we have used service bodies for 13 years or longer, and these bodies are still capable of service for another 7 to 10 years. Our cost of sanding and painting trucks is about \$24 per unit, including labor and material.

Our shop also performs all major repair jobs, including transmission and differential, rebuilding motors and any type of welding necessary to carry through a good maintenance job.

We keep a complete breakdown

of the operating cost of each unit on a monthly basis. Analysis of a typical month reflects an average operating cost of less than 8¢ per mile.

We also keep a breakdown of items of material used on each truck, which show substantially the same figures as the complete record on each truck. However, this gives us the advantage of comparing parts on each individual truck on a month-by-month basis.

We also keep complete records of tire use. Analysis of these records enable us to select the proper tire for the proper use and to determine the type of tire that renders the best service.

~  
*The above is a chapter from a discussion, "Operation and Maintenance Practices", presented by Mr. Gajan at the technical conference for REA field engineers in New Orleans this winter.*



U. J. Gajan

# Good Mapping Is Good Business

**G**OOD operation of a rural electric system requires good maps." That's the belief of Henry M. Faris, manager of Laurens Electric Cooperative, Laurens, South Carolina.

Mr. Faris says that as the Laurens system kept growing the need for mapping to provide good service and efficient management became apparent. The co-op's service area covers a radius of 25 miles, with 1875 miles of lines carrying electric power to the 7000 consumer-members.

Among the advantages made possible by mapping, Mr. Faris says, are better system design, reduction of field survey expense,

faster service for consumers and lower construction costs made possible by proper planning.

Base maps of the Laurens system were obtained by overlay, using U. S. Department of Agriculture aerial photographs of the area. With a scale of 600 feet to one inch, about 150 detail maps are required to cover the system. The individual detail maps are keyed to the county map and are filed for easy reference.

Co-op lines are drawn to scale on the detail maps. Shown are span lengths, pole heights, all equipment on each pole and the conductor type and size. Also included are all account numbers,



**Manager Henry Faris checks three-color circuit diagram of the Laurens Electric Cooperative system. Different colored tape indicates phases.**

providing ready reference on service calls. The account numbers correspond to the metal tag attached to each meter base.

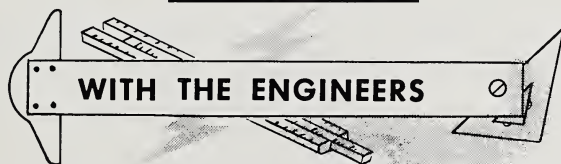
These maps are kept up-to-date from month to month from the co-op's work orders. A glance at the detail maps discloses the full story to co-op personnel. For instance, all equipment on each pole is indicated—transformers, primary and secondary assemblies, and even guys and anchors. The maps likewise indicate all telephone lines and all electric utility lines, but not in detail.

Supplementing the detail maps is a large circuit diagram in the co-op's offices. This diagram shows each of the system's nine substations, the location and size of reclosers, fuses, sectionalizers and disconnect switches. Three different colored tapes indicate each phase. The circuit diagram has been useful in load balancing

between phases and between substations.

The Laurens Co-op serves an area where many consumers are employed in industry, supplementing farm income and improving the general economy. Mr. Faris recalls that when the co-op was organized in 1939 there were 761 consumers on the lines and electric use averaged about 40 kwh monthly. Now, he says, consumers have increased almost 10-fold and kwh is averaging about 270 monthly.

Like other progressive cooperatives, Laurens is pushing electric power use, and directors and management feel that an average of 500 kwh per month is not unlikely in the future. If and when the load reaches that figure they expect to be ready to handle it. Good mapping is one of the management tools designed to help plan for continued increase.



**The pole borer with plugs and hammer should always be together as a kit. The borer should not be used if the latter are not at hand.**

• • • • •

**The cost of transporting coal from the mine to the plant in many cases is equal to or greater than the cost of the coal at the mine.**

• • • • •

**Ridge irons can improve the shield angle of the overhead ground wire and save pole height. However, the longer lever arm may cause more pole splitting and make use of sagging blocks difficult.**

• • • • •

**Only dwarf shrubbery with shallow roots should be placed near building walls.**

• • • • •

**Substation maintenance can be facilitated by the use of inspection records and manufacturers' technical data.**



# POWER USE EXCHANGE



Southwest Louisiana Electric Membership Corporation, Lafayette, has established a new Power Use and Public Relations Department to "give member-consumers the help necessary in making fullest use of electric power on their farms". The new department head will be assisted by the co-op's electrification adviser.

~

Members of the **Hancock-Wood Electric Co-op**, North Baltimore, Ohio, are being enlisted as salesmen. The co-op offers a \$2.00 commission to any member selling a street light or security light to a neighbor. Cost for the light is \$3.00 per month, with no installation charge if pole and lines are already available.

~

**P. K. M. Electric Co-op**, Warren, Minnesota, reports that its Bag of Bulbs campaign last November and December resulted in the sale of 7403 bulbs, ranging from 60-watts to 150-watts. Nineteen 4-H clubs took part in the campaign, selling 926 bags of bulbs and earning themselves a total of \$371.95 in commissions in the process.

Electric appliance and equipment surveys provide co-ops with vital information in power use work and in system planning. **Blue Ridge Electric Membership Corporation**, Lenoir, North Carolina, encouraged quick returns on their recent survey by making members who met a deadline eligible to receive valuable prizes.

~

*Electrik*, monthly newsletter of the **Winnebago Rural Electric Co-op**, Thompson, Iowa, recently reported an interview with farmer Alfred Groe, said to be the first member in the area to install an electrically-driven bunk feeder for his cattle. How long does it take to feed his 140 head? "About 20 minutes", says Mr. Groe, "but actually all I do is throw the switch."

The power use department of the **White River Valley Electric Co-op**, Branson, Missouri, reports that it is following the Inter-Industry Farm Electric Utilization Council's 1957 Power Use Calendar right down the line this year. Results have been good so far, with some of the biggest promotions yet to come.



An application form for free Electric Chick Brooding Insurance is included in *Watts News*, monthly publication of **Codington-Clark Electric Co-op**, Watertown, South Dakota. The insurance pays the original cost of all chickens being brooded electrically which die "as a direct result of the co-operative's failure to deliver electric power through the meter."

~

An electric cooking demonstration in the new Kay Room of the **Kay Electric Cooperative**, Blackwell, Oklahoma, was a portion of Farm and Home Clinic held this winter. A home economist demonstrated the advantages of electric cooking by preparing three complete meals on the co-op's electric range. Many of the women in attendance sampled the dishes, and were as much impressed by their tastiness as by the ease of electric cooking.

~

**Sioux Valley Empire EMC**, Colman, South Dakota, provides guidance for its officials through the Power Use Committee, composed of six couples (husband and wife) from among the members. The committee meets every month and

aids in developing effective farm electrification service, power use promotions and in maintaining goodwill through member and public relations.

~

Electric heating was superior to other fuel, not only in comfort and convenience but also in economy, in a test conducted by **Washington-St. Tammany Electric Co-op**, Franklinton, Louisiana in cooperation with one of its members. A test meter connected to a 3000-watt portable heater in the member's home showed the electric method to be 25 percent cheaper than his previous heating fuel. The advantage of cleanliness and more comfortable heat was attested to by the member.

~

The value of advance planning for power use promotions is well illustrated by **North Dakota Rural Power Use Council's** system of preparing its 1957 Plumberrrma program. A test run was held last fall, plans were completed last November and the program was accepted by the manager's association in January. No wonder the Plumberamas are successful promotions! Everything is planned and nothing left to chance.

## **President Proposes \$200 Million Increase In Electric Loan Authorization**

In a message sent to Congress on March 12, President Eisenhower proposed a \$200 million increase in REA's loan authorization for rural electrification. The additional amount would be provided by transfer from authority now available to the Farmer's Home Administration.

At the time budget requests were prepared last fall (1956), loan applications from rural electrification borrowers were expected to total about \$270 million during fiscal year 1957. A recent survey of electric borrowers' needs indicates that applications will total about \$453 million in 1957. The proposed increase in authorization would enable REA to meet this immediate need and provide a margin which could be applied to the 1958 loan program.


**UNITED STATES  
GOVERNMENT PRINTING OFFICE**  
DIVISION OF PUBLIC DOCUMENTS  
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID  
PAYMENT OF POSTAGE, \$300  
(GPO)

**IN MAY PROMOTE**

## **Irrigation Systems**



The month of May winds up the big push on sprinkler irrigation systems. Check your Farm Electric Power Use Calendar for things you must do to promote sales. And May is a BIG month on household appliances. Be ready to help put these load builders on your lines.